The City of Fort Smith ARKANSAS

FORT SMITH FIRE DEPARTMENT
200 NORTH FIFTH STREET
FORT SMITH, ARKANSAS 72901
479-783-4052

Mike Richards
Fire Chief

Memo

To: Ray Gosack, City Administrator
From: Mike Richards, Fire Chief
Date: November 22, 2011
Re: Cost Comparison for Fire Station 11

In order to provide a better understanding of the projected cost of Fire Station 11 verses other fire stations with similar characteristics and/or demographics, we have researched and developed a cost analysis of twenty-two (22) recently built fire stations. We selected these fire stations for comparison based on one or more of the following criteria:

- Location to Arkansas (border state)
- Completion date
- Relative size and mission
- Common architect to our project (SC, VA, and NC fire stations)

The examples we are providing came from the November 2011 edition of Fire Chief Magazine. Each year Fire Chief Magazine sponsors a program called the Station Style Design Awards. The Station Style Design Awards is selected from entries submitted by fire departments throughout the United States. In order to provide a fair comparison, we did not include fire stations that were located in very large urban areas or states that reflected a much higher building cost per square foot for that region.

According to our architects, Guest Reddick Inc. and Stewart Cooper Newell, the published cost per square foot in Fire Chief Magazine normally reflects the cost of the building only. The other associated costs such as site work, architect and engineering fees, furniture, fixtures, and equipment (FF&E), etc., are not included in the published cost.

Based on this information we have developed a spreadsheet comparing the projected cost of our building relative to the compared fire departments. The only exception to this group is Little Rock. Little Rock just began construction of a new fire station. The projected cost for their new fire station is based on the awarded bid for the project.

Please feel free to contact me if you have any questions.

Fire Station 11 Project Cost Comparison*
2011 Station Style Design Awards by Fire Chief Magazine

City	Square Footage	Cost per Sq. Ft.	Actual or Projected
Fort Mill, SC	15276	$ 134.00	Actual
Fort Smith, AR	**12540**	**$ 150.00**	**Projected**
Crosby, TX	15642	$ 161.00	Actual
Waco, TX	17717	$ 164.00	Actual
Brentwood, MO	20000	$ 170.00	Actual
Roanoke, VA	17430	$ 174.00	Actual
Huntersville, NC	14363	$ 187.00	Actual
Watuga, TX	13651	$ 193.00	Actual
Baytown, TX	10242	$ 197.00	Actual
The Woodlands, TX	12177	$ 203.00	Actual
Norman, OK	10327	$ 207.00	Actual
Victoria, TX	9477	$ 208.00	Actual
Canyon Lake, TX	7638	$ 212.00	Actual
Decatur, TX	14920	$ 212.00	Actual
Columbia, TN	7160	$ 212.00	Actual
Lee's Summit, MO	8905	$ 222.00	Actual
Waco, TX	8583	$ 228.00	Actual
Arlington, TX	11354	$ 234.00	Actual
Newton, KS	12723	$ 251.00	Actual
Little Rock, AR**	8291	$ 261.00	Projected
Conroe, TX	8859	$ 265.00	Actual
Moore, OK	18789	$ 266.00	Actual
Austin, TX	9125	$ 318.00	Actual

*Cost per square foot includes building only. Site work, FF&E, and architect & engineering fees are not included.

** Under construction - not part of Fire Chief Magazine 2011 Station Style Design Awards

VOLUNTEER BRONZE COMBINATION

Station No. 14

FORT MILL, SOUTH CAROLINA

Station No. 14 is a replacement of Pleasant Valley Fire Department's main station. Located minutes from the Charlotte Fire Department, the fire chief and many volunteers are career firefighters for the city of Charlotte. Throughout the design and construction process, many of the layouts and details were executed similar to recent city of Charlotte stations in order to provide familiarity and ease of use by the volunteers. Farley Associates, a neighborhood contractor, took great pride in working with the community and completing this detailed station.

Material choices for the exterior of the facility were chosen to blend with the residential community directly across from Station No. 14. Four large apparatus bays house all equipment, including a ladder truck necessary for the office complexes and large industrial facilities within the coverage area. Although Pleasant Valley is currently a volunteer organization, bunk rooms were designed and incorporated anticipating that the station will be fully manned with one or two full-time companies within the next five years.

Station No. 14 was oriented with additional set-back from Possum Hollow Road anticipating the road width will be increased and desiring to still have full-length front aprons for equipment parking, servicing, and good sight distances for response.

STEWART COOPER NEWELL ARCHITECTS, PA

DESIGN TEAM: Stewart-Cooper-Newell Architects, PA, Architect of Record; Farley Associates Inc., General Contractor

FIRE CHIEF: Greg Nicholson

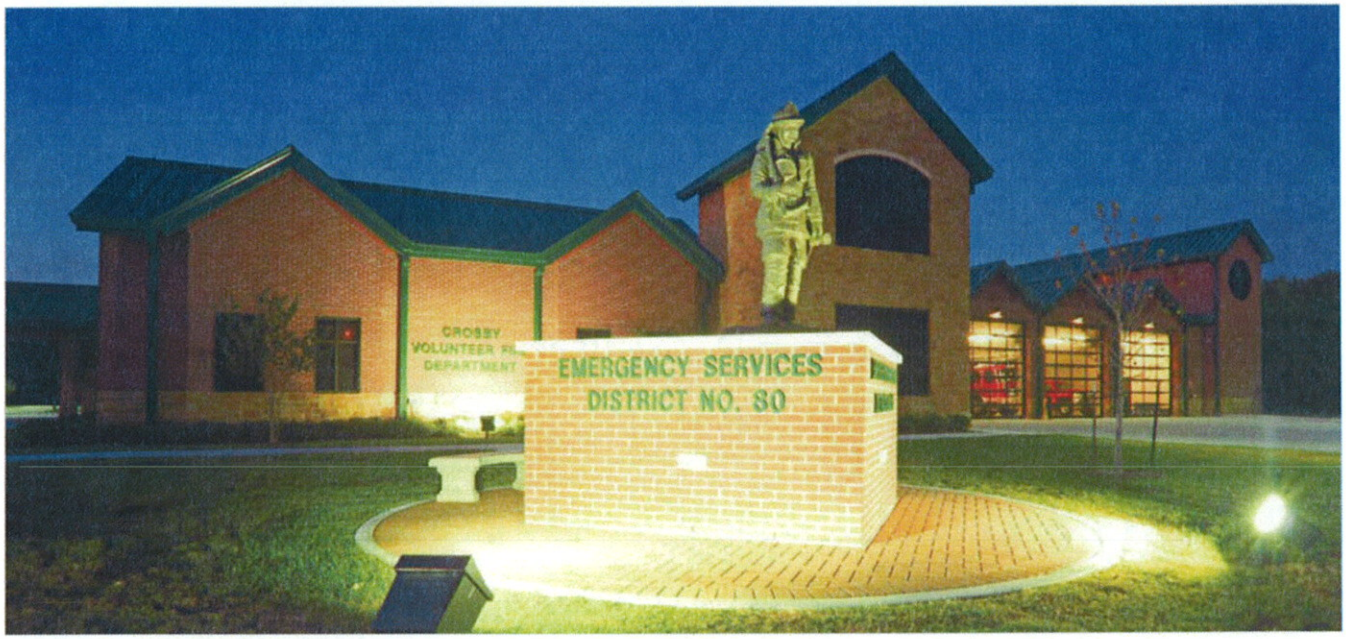
PROJECT AREA: 15,276 sq. ft.

TOTAL COST: $2.05 million

COST PER SQUARE FOOT: $134

COMPLETION DATE: March 2010

VOLUNTEER NOTABLE COMBINATION



Crosby Fire Station No. 2

CROSBY, TEXAS

Since 1942, the Crosby Volunteer Fire Department has prided itself on the motto: "families helping families." The department's coverage now extends beyond 100 square miles, which requires the support of the community. To keep up with recent growth, a special-purpose Emergency Services District was created in 2006, and Station No. 2 was planned to replace an inadequate existing facility.

A two-phase plan was implemented to not interrupt protection services during construction. In phase two, the existing station was demolished and the remaining portion of the project was completed, allowing the department to operate out of the completed portion of the project. The station design accommodates the fire department, the emergency service district administration, fire marshal, training, and community events, while incorporating efficient circulation and layers of access control.

The floor plan consists of four 100-foot bays, auxiliary storage spaces, mezzanine with propelling and ladder training, training room, conference room, offices, living area, and dorms. The training and conference rooms are open for public use while maintaining secured access to the remainder of the building. The building is finished with a full stone and traditional red brick façade, high-efficiency tinted glazing and pronounced standing-seam metal roof.

JOINER PARTNERSHIP INC.

DESIGN TEAM: **Carl Joiner, AIA; Ricardo Martinez, LEED AP; Chad Joiner, Project Manager; Montgomery & Barnes, Director of Construction/Civil; Matrix Structural, Structural; DBR Engineering Consultants, MEP; Durotech, General Contractor:**

FIRE CHIEF: **Alan Kulak**

PROJECT AREA: **15,642 sq. ft.**

TOTAL COST: **$2.5 million**

COST PER SQUARE FOOT: **$161**

COMPLETION DATE: **February 2011**

CAREER NOTABLE

City of Waco Fire Station No. 1

WACO, TEXAS

Waco's Fire station No. 1 is a replacement station designed in a traditional style to reflect the historic district in which it is located. Just across the Brazos River from the downtown area of Waco, the station's cast-stone and brick façade reflects the surrounding early 20th-century brick buildings. The monumental facility is large enough to accommodate three shifts of 12 full-time firefighters and five bays of apparatus equipment. Support spaces adjacent to the bay include an SCBA room, an SCBA test/repair room, a shop, a storage room, a bunker room, and an upstairs storage mezzanine.

The living portion of the building features a large exercise room that serves as the workout facility for the entire Waco Fire Department. A large multipurpose room doubles as a training room and a meeting room for the community; two day rooms accommodate the differing preferences of multiple generations of firefighters.

Station No. 1 also contains a well-equipped kitchen with lockable pantries and refrigerators for each shift along with a preparation island and large dining area. Adjacent to the kitchen is a covered porch with an outdoor eating area and large barbeque pit.

BROWN REYNOLDS WATFORD ARCHITECTS

DESIGN TEAM: **Mark Watford, FAIA, Principal in Charge; Ray W. Holliday, AIA, Director/Project Manager; Lisa Andel, Project Coordinator; Hector Ochoa and Katherine Fennell, Architectural Interns**

FIRE CHIEF: **John Johnston**

PROJECT AREA: **17,717 sq. ft.**

TOTAL COST: **$2.91 million**

COST PER SQUARE FOOT: **$164**

COMPLETION DATE: **January 2011**

CAREER NOTABLE

Brentwood Fire Station

BRENTWOOD, MISSOURI

The Brentwood Fire Department had outgrown its space. They were operating out of a two-bay station connected to City Hall that was last renovated in the 1970s. The new station is a 20,000-square-foot, four-bay facility that has individual bunk rooms for the crew, a large classroom that is used both by the department and other continuing education programs in Brentwood, and a fully equipped fitness center in the lower level.

The classroom was designed for evolving technology and includes a Smart Board. The space is very energy efficient; the VRF mechanical system allows for greater control of individual spaces, and traffic signals are solar-powered.

This new facility equips Brentwood Fire Department with what it needs to better serve its community and neighboring municipalities. The new classroom is a feature that not many stations have, and it provides safety classes not only to the department and other departments in St. Louis County, but also the community at large. Because the station now has separate facilities, it can accommodate for both male and female firefighters for the first time.

BOND WOLFE ARCHITECTS

DESIGN TEAM: **Bond Wolfe Architects**
FIRE CHIEF: **Ted Jury**
PROJECT AREA: **20,000 sq. ft.**
TOTAL COST: **$3.4 million**
COST PER SQUARE FOOT: **$170**
COMPLETION DATE: **December 2010**

VOLUNTEER NOTABLE COMBINATION

No. 1 North County Fire & Rescue Station

ROANOKE, VIRGINIA

This fire station, the first for Roanoke County since the 1970s, is a 1-story, pre-engineered structure wrapped in a stone and brick façade. With 17,430 square feet, the building includes three drive-through apparatus bays; PPE storage; decontamination and tool maintenance facilities; and training areas on two levels. The residential quarters for 12 firefighters plus supervisors include a bunk room, private baths, fitness room, day room, dining room, kitchen, and laundry. Business spaces include offices for a captain, battalion chief, and EMS; a conference/training room, public lobby, and public toilets.

Exterior finishes include brick, stone veneer, and metal roof matching the adjacent Harshbarger House, a historic home built in 1797 and listed in the National Register of Historic Places. Stone bays with arched openings help reduce the scale of the building and blend with its historic and natural context.

Much of the 9.7-acre site is undeveloped with stands of deciduous and evergreen trees dotting a rocky hillside. New plantings preserve the neighbors' privacy. Site paved areas are a combination of heavy-duty asphalt and reinforced concrete. Mechanical units and dumpsters have been screened from view with enclosures matching the building's façade. The project also includes an emergency generator and an above-ground fueling station.

STEWART-COOPER-NEWELL ARCHITECTS, PA

DESIGN TEAM:

Stewart-Cooper-Newell Architects, PA, Design Consultant

Hughes Associates Architects & Engineers, Architect of Record

G&H Contracting Inc., General Contractor

FIRE CHIEF: Richard E. Burch Jr.

PROJECT AREA: 17,430 sq. ft.

TOTAL COST: $3.02 million

COST PER SQUARE FOOT: $174

COMPLETION DATE: July 2009

VOLUNTEER NOTABLE COMBINATION

Huntersville Fire Station No. 3

HUNTERSVILLE, NORTH CAROLINA

As Charlotte emerges as a large city, surrounding small communities like Huntersville are growing and making the transition to towns. Significant residential growth is in place. Commercial development is following. Previously protected by five volunteer departments, Huntersville must now have more protection and paid firefighters to supplement the volunteers. They will soon transition to a full-time operation. Station No. 3 allows expansion of coverage and is an investment for the future. The apparatus room is the dominate element and focal point of the structure with a curved pediment and tall columns. It is flanked by offices and living quarters allowing for direct access to the vehicles from multiple points.

Support spaces are also conveniently located along the sides. A mezzanine provides storage and training opportunities. An exercise room and porch are provided. And, the police department's community office is accessible from parking.

The site is environmentally sensitive with water-quality filter and detention ponds. Landscape design uses indigenous plants. Glass doors allow visibility and provide natural light. The pedestrian entry is identified by a colonnade. The brick exterior relates positively to the nearby residences while the standing seam roof reinforces the building's civic nature with distinctiveness and permanence.

GARNER & BROWN ARCHITECTS, PA

DESIGN TEAM: **Garner & Brown Architects, PA, Architect; Cresent Construction Co., General Contractor; Site Solutions, PA, Landscape/ Civil; Solid Rock Structural PLLC, Structural; Morrison and Associates, PA, Mechanical, Optima Engineering, PA, Electrical Engineer**

FIRE CHIEF: **Larry Irvin**

PROJECT AREA: **14,363 sq. ft.**

TOTAL COST: **$2.68 million**

COST PER SQUARE FOOT: **$187**

COMPLETION DATE: **October 2010**

CAREER NOTABLE

Central Fire Station

WATAUGA, TEXAS

The Central Fire Station is the first career station for the city of Watauga and was programmed to accommodate the transition from a Department of Public Safety concept to a full-time, standalone fire department.

The station was designed to be functional, efficient, comfortable, and sustainable. Site orientation allows for limited east and west sun exposure and smooth traffic flow for apparatus and parking. Materials (brick, concrete block and steel frame) were chosen for low maintenance and durability. A glass clerestory over the apparatus bays and living areas as well as numerous operable windows throughout the facility allow for an abundance of natural light and ventilation. Sensors detect the amount of natural light and limit the activation of interior lighting, saving energy and reducing cost. Along with ceiling fans in all occupied spaces, radiant floor heating in the bay, and solar-powered water heating these systems combine to create an energy-efficient and environmentally responsible facility.

The station was designed to house 10 people and is equipped with a 30-person training room, workout facility and commercial-grade kitchen. The station is protected by a complete sprinkler system, smoke and carbon-monoxide detectors, and a monitored fire alarm system.

JIM THARP/GSBS ARCHITECTS

DESIGN TEAM: **Jim Tharp/GSBS Architects**
FIRE CHIEF: **Bill Crawford**
PROJECT AREA: **13,651 sq. ft.**
TOTAL COST: **$2.63 million**
COST PER SQUARE FOOT: **$193**
COMPLETION DATE: **May 2011**

SATELLITE NOTABLE

City of Baytown Fire Station No. 6

BAYTOWN, TEXAS

Nestled within East Texas pine trees in Baytown, Fire Station No. 6 is situated in an ideal location for immediate response to the growing residential areas of the community. The Texas vernacular design blends pitched roofs and dormer windows with a stone facade and heavy timber trusses to achieve a welcoming, residential feeling.

This facility houses five firefighters and two EMS responders, and includes four 65-foot, drive-through bays to store apparatus equipment. The floor plan is tightly organized in a "race track" arrangement to increase efficiency and improve response times. The heart of the station, comprised of the kitchen, day room, and outdoor barbeque pit, is centrally located within the facility.

Baytown's proximity to the Gulf Coast necessitates rigorous hurricane protection and one of the primary design intentions was to discretely incorporate several protective strategies. An engineered metal roof, tie-downs at the trusses and foundation, impact-resistant glazing, and a double door system in the apparatus bays protect the fire station against 150 mph winds and flying debris. As a result, Station No. 6 not only functions as a shelter during the storm, but also facilitates a rapid emergency response afterwards.

BROWN REYNOLDS WATFORD ARCHITECTS INC.

DESIGN TEAM: Mark Watford, FAIA, Principal in Charge; Ray W. Holliday, AIA, Director/Project Manager; Matt Faulkner, Project Architect; Peri Arthur and Lee Ann Nixon, Architectural Interns

FIRE CHIEF: Shon Blake

PROJECT AREA: 10,242 sq. ft.

TOTAL COST: $2.02 million

COST PER SQUARE FOOT: $197

COMPLETION DATE: March 2011

SATELLITE NOTABLE

Fire Station No. 8

THE WOODLANDS, TEXAS

As The Woodlands Township continues to expand from its humble beginnings in 1974 to become a nationally recognized development, it faces the challenge of expanding protection services at the same exceptional rate of growth. Located 30 miles north of Houston, Texas, The Woodlands Fire Department protects 30 square miles and more than 90,000 residents. Fire Station No. 8 was constructed specifically to increase responsiveness to the growing village of Indian Springs.

Building aesthetics were refined through multiple iterations to meet the high design standards of both the township and the village. A full stone façade, tile roof, high-efficiency glazing, and cast-stone columns and window treatment all complement the community aesthetic. Painstaking efforts were taken to preserve the township's mature vegetation buffer — protecting the site's tall pines sometimes as close as 10 feet from the building. The facility includes three drive-through bays, offices, living spaces, and dorms. The design promotes efficient work and living facilities for the four-man shifts, as well as sufficient storage and work space for the tools and equipment.

The addition of Station No. 8 played a vital role in the Department's promotion to an ISO rating of 1.

JOINER PARTNERSHIP INC.

DESIGN TEAM: Carl Joiner, AIA, President; Ricardo Martinez, LEED AP, Project Manager; Chad Joiner, Director of Construction; Montgomery & Barnes, Civil; Matrix Structural, Structural; DBR Engineering Consultants, MEP; Teal Construction, General Contractor

FIRE CHIEF: Alan Benson

PROJECT AREA: 12,177 sq. ft.

TOTAL COST: $2.48 milliion

COST PER SQUARE FOOT: $203

COMPLETION DATE: August 2011

SATELLITE NOTABLE

City of Norman Fire Station No. 8

NORMAN, OKLAHOMA

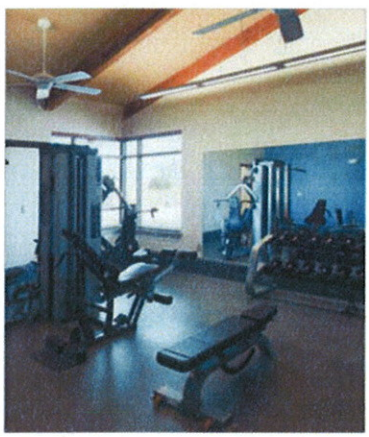
KIRKPATRICK ARCHITECTURE STUDIO

DESIGN TEAM: Diversified Construction of Oklahoma, General Contractor; Darr & Collins LLC, MEP; Clough Harbor & Associates LLP, Structural; Grossman & Keith Engineering Co., Civil; Christopher Russell Landscape Architect, Landscape
FIRE CHIEF: James Fullingim
PROJECT AREA: 10,327 sq. ft.
TOTAL COST: $2.14 million
COST PER SQUARE FOOT: $207
COMPLETION DATE: May 2011

Norman, Okla., is a fast-growing city, particularly on its northwest side, where the new Fire Station No. 8 is located, which reduced response times in that district from 6 to 8 minutes down to 4 minutes. Additionally, the station is adjacent to a residential area of single-family homes and a school, so forms and materials were chosen that would complement the surrounding neighborhood. Reflecting the department's commitment to the community, the station includes a training room that is open to the community to use.

The station has three drive-through bays and sleeps up to seven personnel, which includes captain's quarters and a bunk room. A bunk-room design was chosen because the firefighters felt that the camaraderie was missing in more recent stations that had individual sleep rooms. To provide accommodations for male and female firefighters, individual showers were included in the station.

In good stewardship of community resources, the station is the first in the city to pursue LEED certification and is currently awaiting notification from the USGBC. Additionally, if the certification process stays on course, the station could be the first fire station in the state of Oklahoma to have LEED certification.



SHARED NOTABLE FACILITY

City of Victoria Fire Station No. 2

VICTORIA, TEXAS

The primary goal in the design of Victoria's Fire Station No. 2 was to provide a multi functional building for the city's public-safety personnel: fire, EMS and police.

Critical to any department's response time is a well-planned and supported bay. Straight corridors provide direct access from the living quarters to three drive-through bays housing four vehicles: three fire apparatus and a medic unit. Hose bibbs, cord reels, exhaust filtration and non-slip floors complete functionality. An SCBA room, EMS storage and decontamination, and gear storage provide auxiliary support to the bay.

Police are provided with a satellite operations hub in a fully equipped office near the lobby.

Located within 50 miles of the Gulf, hurricane protection for the station was another important goal. Storm panels at windows, steel coiling doors at bay doors and enhanced structural design ensure that the station will remain operational during severe weather.

At the heart of Station No. 2 is a large kitchen/dining room. In the kitchen, durable finishes and commercial appliances allow for efficient meal preparation; the dining area accommodates all emergency personnel for family style meals. The central location and open design ensure that the kitchen/dining room serves as the central gathering space within the station.

BROWN REYNOLDS WATFORD ARCHITECTS

DESIGN TEAM: **Mark E. Watford, FAIA, Principal in Charge; Ray W. Holliday, AIA, ASLA, LI, Director/Project Manager; Janelle Franklin, RA, Project Coordinator; Laura Pivonka, IESNA, Project Coordinator**

FIRE CHIEF: **Vance Riley**

PROJECT AREA: **9,477 sq. ft.**

TOTAL COST: **$1.97 million**

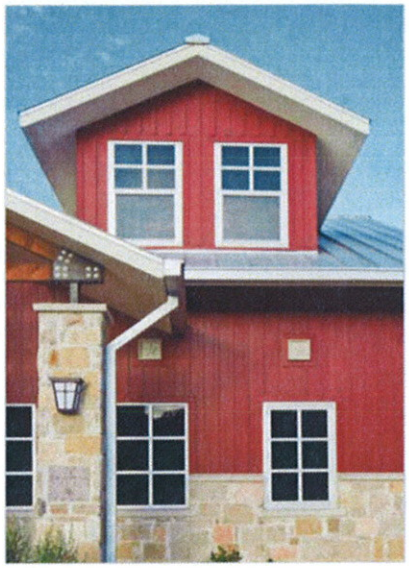
COST PER SQUARE FOOT: **$208**

COMPLETION DATE: **January 2011**

VOLUNTEER SILVER COMBINATION

Canyon Lake Fire/EMS Station No. 5

CANYON LAKE, TEXAS



The hill county landscape and a residential setting were the aesthetic inspirations for Canyon Lake Fire/EMS Station No. 5. The facility complemented the surroundings as the quintessential "hill country" firehouse with local stone, red siding, heavy timber trusses, large dormers and deep overhangs. The dual-purpose facility houses a combination of seven fire fighters and EMS responders in three shifts. Two double-deep, drive-through bays accommodate a combination of four fire and EMS apparatus. Located on the second floor, the sleeping rooms are tucked into dormers to maximize useable square footage. A captain's suite is located on the first floor to ensure assistance to the public at any time. The watch room is located adjacent to the public entry and includes a pass-through window to the entrance lobby.

An EMS treatment room is located off of the entry to provide immediate attention to the public. The kitchen is equipped with a large central island and serves many functions including separating the kitchen from the dining area. Directly off of the kitchen, a covered patio provides an outdoor cooking and seating area.

BROWN REYNOLDS WATFORD ARCHITECTS INC.

DESIGN TEAM: **Mark Watford, FAIA, Principal in Charge; Ray W. Holliday, AIA, Director/ Project Manager; Jennifer Bettiol & Nicole Dyll, Project Coordinators; Dianne Jones, & Brittany Lawrence, Architectural Interns**

FIRE CHIEF: **Shawn Wherry**

PROJECT AREA: **7,638 sq. ft.**

TOTAL COST: **$1.62 million**

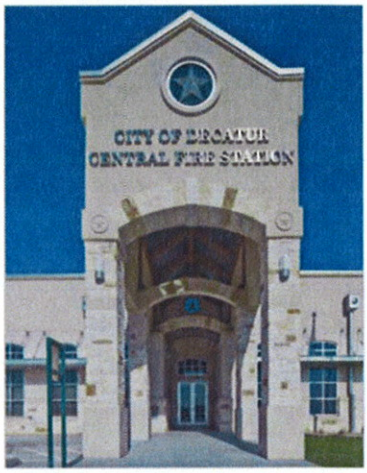
COST PER SQUARE FOOT: **$212**

COMPLETION DATE: **June 2011**

VOLUNTEER NOTABLE COMBINATION

City of Decatur Central Fire Station

DECATUR, TEXAS



The scope of work for the fire administration facility consisted of a building lobby, reception, chief's office, assistant chief's office, fire marshal's office, plan review office, evidence storage and break room. The Central Fire Station scope included an EOC/training room, training room storage, kitchen/dining room, day room, three bunk rooms, a fitness room, two captain's offices with bunk rooms, VFD office, watch room, decon room, bunker gear rooms, EMS storage, SCBA compressor/storage, lawn equipment room, apparatus bay storage and seven apparatus bays (3½ drive-through bays). The design concept was reflective of the contextual overtones of the city, the use of native stone from nearby quarries and incorporation of handsome architectural elements from photographs of a historic fire station found in researching the annals of the city cibrary.

The Decatur CFS and Fire Administration Building incorporated several sustainable features including daylight harvesting, rainwater harvesting (alternate), stormwater collection and detention, high albedo roofing and high-efficiency HVAC systems.

RANDALL SCOTT ARCHITECTS INC.

DESIGN TEAM:
Randall B. Scott, AIA, Principal in Charge
Gregory J. Conaway, Project Director
FIRE CHIEF: Mike Richardson
PROJECT AREA: 14,920 sq. ft.
TOTAL COST: $3.16 million
COST PER SQUARE FOOT: $212
COMPLETION DATE: March 2011

CAREER NOTABLE

Columbia Fire Station No. 2

COLUMBIA, TENNESSEE

Circulation was our highest priority, as it is absolutely critical for the firefighters to reach the apparatus bay in a timely manner from any part of the station. Also of great importance were sustainable concepts to minimize the environmental impact of this facility operating 24/7/365 in a main commercial area. The orientation of the building plays an integral role in its design. The apparatus bay is oriented toward the street for programmatic operational needs, but the rest of the structure faces due north to provide optimal lighting and minimize direct heat gain. The large green wall serves as a fire wall and provides a clear distinction between the bay and the living space. It also helps to guide the public to the front entry.

The fire station accommodates three shifts of five personnel who work 24-hour shifts. The sleeping quarters are divided so each person on a shift has his/her own room. Each room contains three single beds and three wardrobes so that no two crew members will share beds or storage. There are three bathrooms each with a private toilet, sink and shower, and one public restroom. The fitness room is 315 square feet.

Renewable finishes are used throughout the facility. The tall kitchen volume allows the typical hot kitchen temperatures to dissipate. The patio has a trellising system to promote a "captive growing space" and is an ideal outdoor barbecue/eating area. The apparatus bay houses the main ladder truck in one bay and the other bay houses multiple small trucks. The 3,200-square-foot bay is constructed with water-resistant materials. Both bays contain an overhead vehicle exhaust system and have multiple hosebibbs. The apron is made up of permeable pavers that are part of a Bio-Aquifer Storm System which improves the water quality.

The geothermal system is comprised of two heat exchanges and eight 300-foot-deep bores. The city's objective in choosing this design was to present an example of an economical, efficient, and sustainable solution worthy of future public-service facilities.

LYMAN DAVIDSON DOOLEY INC.

DESIGN TEAM: Lyman Davidson Dooley Inc., Architect; I.C. Thomasson Associates, MEP; Structural Design Group, Structural; Webb Engineering, Civil; Paul Boyer, City Manager; Steve Cross, Deputy Chief

FIRE CHIEF: Lee Bergeron

PROJECT AREA: 7,160 sq. ft.

TOTAL COST: $1.52 million

COST PER SQUARE FOOT: $212

COMPLETION DATE: June 2010

SATELLITE SILVER

Lee's Summit Fire Station No. 2

LEE'S SUMMIT, MISSOURI

Station No. 2 is a prime example of how LEED-level design can make a new station highly sustainable and reduce long-term costs while maintaining its essential function. The site size and geometry required a highly efficient site/station design. The station features two double-deep, drive-through apparatus bays, eight paired bunk rooms with "Jack and Jill" bathrooms and a living area organized around the day room, kitchen, dining, fitness and training rooms. The station layout is such that the captain can step out of his office and have a command view of the entire living/administrative side of the station. This layout facilitates operational efficiency and good communication in day-to-day functions.

Lee's Summit's terrain inspired the station's Prairie Style architecture as expressed in the low building profile and large roof overhangs that shade windows while optimizing daylight. Exterior material selections of brick, synthetic stucco and a metal roof provide the needed long-term durability and low maintenance.

Adding to the station's sustainability are the "Cool Roof" metal panels to reflect solar heat, high-efficiency lighting, occupancy sensors, finished concrete, flooring, plyboo cabinets and other interior finishes made from recycled or highly renewable material, and a rain garden. A high-performance spray insulation system reduces energy use and quiets traffic noise from a busy state highway situated just 75 feet from the back of the station site. The result is a station that blends Lee's Summit's prairie past in a facility that will serve the community for decades to come.

WILLIAMS SPURGEON KUHL & FRESHNOCK ARCHITECTS

DESIGN TEAM: Rick Kuhl, RA LEED AP; Dustin Watkins, LEED AP; Michelle Hessenflow; Alison Broockerd; Cook, Flatt & Strobel, Civil; Bob D. Campbell and Co., Structural; Hoss & Brown, MEP; Straub Construction, General Contractor

FIRE CHIEF: Keith Martin

PROJECT AREA: 8,905 sq. ft.

TOTAL COST: $1.94 million

COST PER SQUARE FOOT: $222

COMPLETION DATE: May 2011

CAREER NOTABLE

BROWN REYNOLDS WATFORD ARCHITECTS

DESIGN TEAM: Mark Watford, FAIA, Principal in Charge; Ray W. Holliday, AIA, Director/Project Manager; Brian Gibbs, AIA, Project Architect; Lisa Andel, Project Coordinator; Shanna Smith, Hector Ochoa, Matthew Henson and Quinton Batten, Architectural Interns

FIRE CHIEF: John Johnston

PROJECT AREA: 8,583 sq. ft.

TOTAL COST: $1.96 million

COST PER SQUARE FOOT: $228

COMPLETION DATE: August 2010

City of Waco Fire Station No. 3

WACO, TEXAS

Waco Fire Station No. 3 is located on the Waco campus of Texas State Technical College, which occupies the site of a converted Air Force base. The station is located adjacent to the still-active runway, and the sleek finishes and deep roof overhangs subtly resemble the wings of an aircraft. Roof forms from other buildings on campus were combined in a unique way to accentuate the various functions of the station. Notably, the 3-story barrel-roof spine organizes the plan by separating the living quarters and apparatus bay.

The state-of-the-art facility, which serves the college campus and surrounding area, has a designated bay for specialized Aircraft Rescue and Firefighting (ARFF) apparatus in addition to two double-stacked bays for traditional firefighting apparatus.

Station No. 3 was designed to house eight full-time firefighters, each in private sleeping quarters. Two smaller day rooms replaced the traditional single, larger day room, which allows for one of them to be used for training purposes. A well-equipped kitchen and dining area with natural daylighting provide comforts of home while the covered porch with a barbeque pit and front-row view of the runway provides an area for outdoor relaxation.

SATELLITE NOTABLE

STEELE & FREEMAN INC.

DESIGN TEAM: City of Arlington (Brian Riley, Assistant Fire Chief; Alf Bumgardner, AIA, Architect; Julita Untung, Lead Designer; Jadey James, Site Observation); Steele & Freeman Inc., Construction Manager-at-Risk (Jeff Koehn, Project Director/Preconstruction Estimating; Jared Jones, Project Manager; Tom Hanley, Project Superintendent; Darrell Benton, Executive VP; Larry Gregg, General Superintendent); HPM Consulting Engineers Inc., MEP; RL Woods & Associates, Structural; Hamilton Duffy PC, Civil; Don C. Wheeler, Landscape Architect; Air Balancing Co. Ltd., Commissioning Agent

FIRE CHIEF: Don Crowson

PROJECT AREA: 11,354 sq. ft.

TOTAL COST: $2.8 million

COST PER SQUARE FOOT: $234

COMPLETION DATE: July 2011

Fire Station No. 9

ARLINGTON, TEXAS

Fire Station No. 9 was designed to replace an existing station that no longer met operational needs. Structural issues, inadequate space and traffic congestion made exiting the site problematic.

The city of Arlington designed the new fire station with in-house architectural staff in partnership with the assistant fire chief over capital improvement projects. The design team toured other stations and attended the 2010 *Station Style* Conference for design ideas. Using in-house design and construction manager-at-risk project delivery kept the project within budget and schedule.

Design goals achieved include housing 10 personnel with individual sleeping quarters. Corridors provide access from dorm rooms to apparatus bays with one 90° turn. Firefighters' sleeping quarters are closer to the back of the apparatus, passing by the EMS supply room. Officers' and drivers' sleeping quarters are closer to the front of the apparatus, passing by the district map and base radio. Day room, kitchen, and fitness room have direct access to the apparatus bays without any turns. Firefighting gear, an emergency shower and decontamination sinks have immediate bay access.

Four extended-length, drive-through apparatus bays feature front exit four-fold doors. The vehicle exhaust system is a hands-free, hose less exhaust system. An adjacent raised mezzanine is used for ladder and rescue training as well as storage.

A community-assist room is used for blood pressure checks, medical treatment, public restroom and public telephone access.

The new station is registered LEED Silver. Regional and recycled materials, including local stone on the façade were used. High R–value insulation helped reduce energy costs. Low- and no-VOC finishes were used for indoor air quality. Native landscaping, weather controlled drip irrigation, a storm water detention pond, low flow bathroom fixtures were used to reduce water usage.

SATELLITE NOTABLE

Newton Fire/EMS Station No. 3

NEWTON, KANSAS

Funded through the American Recovery and Reinvestment Act — which received more than 6,000 applications nationwide — Newton Fire/EMS Station No. 3 was the only grant recipient from Kansas. A modern, full-service fire and EMS station, it serves the burgeoning community's safety needs, while facilitating community interaction and establishment of a new southern gateway to the city.

The facility is a full-service, dual-discipline fire/EMS station, with a branch office for the police department, a remote data-storage facility for the city, and a multipurpose training/community room and emergency operations center. The building is also designed with integrated training features such as confined space training and external/internal ladder stays.

Designed with openness, day-lighting, durability and efficiency in mind, the station has a four-vehicle, two-aisle drive-through apparatus bay and can house four to eight firefighters in dual-occupant bedrooms and open living quarters. The exterior materials, colors and building features were designed to stimulate the spirit of the community and establish a new timeless building vernacular.

The building is registered LEED Silver. A few sustainable components include: a rainwater-harvesting system for irrigation, bioswale/rain garden, low water-use plumbing fixtures, extensive day lighting and building systems controls, and high-efficiency mechanical systems.

LAWKINGDON ARCHITECTURE

DESIGN TEAM: LawKingdon Architecture, Architect, Landscape and Interior Design, and MEP; Dudley Williams Associates, Structural; Baughman Co., Civil; Martin K. Eby Construction Co., General Contractor; Ezhini Art and Design, Photographer

FIRE CHIEF: Gary Denny

PROJECT AREA: 12,723 sq. ft.

TOTAL COST: $3.2 million

COST PER SQUARE FOOT: $251

COMPLETION DATE: June 2011

SATELLITE NOTABLE

City of Conroe Fire Station No. 4

CONROE, TEXAS

Fire Station No. 4 was designed as a replacement station to meet Conroe's growing fire-safety needs. The new facility features two drive-through bays and accommodates three shifts of seven firefighters each. Keeping in mind the site's proximity to a major state roadway and in commemoration of the fire department's centennial anniversary, the building's tower was designed to stand as a monumental symbol of civic pride.

Fire-service members were eager to participate in the design process: They wanted to live in a station that respected their privacy and way of life, as the station becomes their home while on duty. Design requirements included soundproofing all walls defining the bedrooms; a commercial-grade kitchen equipped with a pantry and refrigerator for each shift, a sense of openness between communal areas to facilitate conversation, and low-maintenance, stained-concrete flooring in all corridors, kitchen and dining areas.

Another focus was the provision of apparatus bay support spaces, which include a bunker gear room with custom-designed racks and benches, a hose storage room, and a second-floor climate-controlled quartermaster space with customized storage units. Double doors opening from the quartermaster's space directly into the apparatus bay facilitate the transfer of large equipment with a lift.

BROWN REYNOLDS WATFORD ARCHITECTS INC.

DESIGN TEAM: Mark Watford, FAIA, Principal in Charge; Ray W. Holliday, AIA, Director/Project Manager; Lisa Andel, Project Coordinator; Andrea Harvey, Shanna Smith, Hector Ochoa and Katherine Fennell, Architectural Interns

FIRE CHIEF: Ken Kreger

PROJECT AREA: 8,859 sq. ft.

TOTAL COST: $2.35 million

COST PER SQUARE FOOT: $265

COMPLETION DATE: January 2011

CAREER NOTABLE

Main Station No. 1

MOORE, OKLAHOMA

As the city of Moore progresses and grows, one of the goals of Main Station No. 1 was to set a high design standard for future public and private development. Patterns of multicolored brick, rustic stone accents, and arched windows evoke an historic feel. "Chicago style" architecture, representing firefighters' rich history, was incorporated through the use of bright red metal finishes, including traditional red overhead doors.

The 35-foot-tall clock tower is the focal point of the station's main public entrance. The lobby is within a sun-filled atrium; the contemporary design of the skylight signals that while the building structure is based on historic ideals, the station operations are modern and progressive in function.

At just under 19,000 square feet, the new Main Station No. 1 replaces and relocates the original existing Station No. 1, which housed administration and fire marshal offices. The station includes four drive-through bays and a dormitory with eight bedrooms. The apparatus bay is designed for function, safety, and durability with concrete floors, bunker gear, continuous floor drains, automatic doors, vehicle exhaust system, SCBA, air compressors, emergency eye wash, radiant heating, and water available for rapidly filling tank trucks.

LWPB ARCHITECTURE

DESIGN TEAM: **LWPB Architecture, Architect; Engineering Solutions, Structural; Darr & Collins, MEP; Howard-Fairbairn Site Design, Landscape Architecture & Site Planning; Apollo Building Systems Inc., Construction Manager**

FIRE CHIEF: **Charles Stephens**

PROJECT AREA: **18,789 sq. ft.**

TOTAL COST: **$5 million**

COST PER SQUARE FOOT: **$266**

COMPLETION DATE: **March 2011**

CAREER NOTABLE

Avery Ranch/Davis Springs Fire & EMS Station

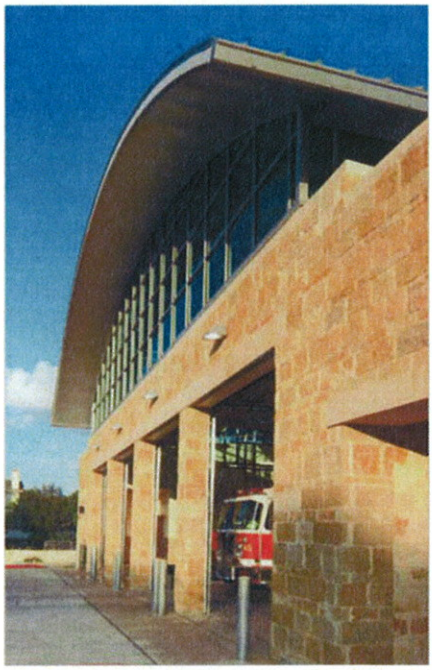
AUSTIN, TEXAS

Austin's Avery Ranch Fire and EMS Station combines the department's prototypical firehouse configuration with the use of low-maintenance materials, natural lighting, and water conservation measures to achieve a LEED-Gold rating.

Its curving facade addresses two street frontages and pays homage to the distinctive curving facade of Austin's Fire Station No. 1. Native plants and regionally quarried stone give the project its Texas Hill Country character, while a 17,000-gallon rainwater collection system and a photovoltaic array providing 8% on-site renewable energy production minimize the station's utility costs.

Energy usage also was reduced by utilizing high-efficiency HVAC, an energy recovery system, and natural day-lighting for critical work areas such as the apparatus bay, office, day room and kitchen. Large windows protected by deep porches and roof overhangs were employed to create the indirect lighting which is most comfortable for occupants while minimizing artificial light.

Extensive clerestory glass provides plentiful natural light in the apparatus bay while electric operators open these high clerestory windows for increased ventilation and thermal comfort. Well-protected porches and a curving screen wall give the firefighters generous outdoor activity spaces but retain a welcome degree of privacy.



WHITE, DOLCE & BARR ARCHITECTS AND PLANNERS INC.

DESIGN TEAM: Alan Barr, Principal, WD&B; Jose I. Guerra Inc., Structural and MEP; Raymond Chan & Associates, Site Civil; Winterowd Associates, Landscape; Urban Design Group, Off-Site Civil; Stewardship, Inc., LEED; Greg Hager, AFD Facilities Manager; Craig Russell, Austin Public Works

FIRE CHIEF: Rhoda Mae Kerr

PROJECT AREA: 9,125 sq. ft.

TOTAL COST: $2.91 million

COST PER SQUARE FOOT: $318

COMPLETION DATE: December 2010